

CLAIMS

1. An implantable electrode lead having a distal end provided with at least one electrode to be
5 implanted in a predetermined portion of a living body in order to perform at least one of transmission of an electrical stimulation pulse to a living body and sensing of an electrical signal from the living body, a proximal end provided with connecting means to be
10 connected to an implantable medical instrument, and a lead body provided between said distal end and said proximal end and adapted to electrically connect said electrode and said connecting means to each other, characterized in that
15 said lead body includes a plurality of wires with different mechanical properties and insulated from each other,
said plurality of wires being electrically connected to said at least one electrode to be parallel
20 to each other.

2. The implantable electrode lead according to claim 1, characterized in that said plurality of wires are wires with different electrical resistances.

543
282
3. The implantable electrode lead according to claim 1 or 2, characterized in that each of said plurality of wires is a wire with a single layer made of at least one metal material, or a composite wire

with a plurality of different single layers made of at least one metal material.

4. The implantable electrode lead according to claim 3, characterized in that said composite wire with
5 said plurality of different single layers has a clad structure obtained by covering a first single layer with a second single layer among said plurality of types of single layers.

5 10 483
5. The implantable electrode lead according to claim 1 or 2, characterized in that said plurality of wires are made of have different materials.

6. The implantable electrode lead according to any one of claims 1 to 5, characterized in that among said plurality of wires, a first wire has an electrical
15 resistivity of not more than $5 \mu\Omega\cdot\text{cm}$ and a second wire has an electrical resistivity of not less than $5 \mu\Omega\cdot\text{cm}$.

7. The implantable electrode lead according to claim 3 or 4, characterized in that said composite wire has a first single layer made of a metal material or
20 alloy material with an electrical resistivity of not more than $5 \mu\Omega\cdot\text{cm}$ and a second single layer made of a metal material or alloy material with an electrical resistivity of not less than $5 \mu\Omega\cdot\text{cm}$.

8. The implantable electrode lead according to
25 any one of claims 3, 4, and 7, characterized in that said first and second single layers of said composite wire contain silver and a cobalt alloy, respectively.

9. The implantable electrode lead according to any one of claims 1 to 8, characterized in that said lead body comprises a helical parallel coil of said plurality of wires insulated from each other.

5 10. An implantable medical instrument using an implantable electrode lead having an electrode to be implanted in a predetermined portion and a lead body to be electrically connected to said electrode, characterized in that

10 said lead body includes a plurality of wires with different mechanical properties and insulated from each other,

said plurality of wires being electrically connected to said at least one electrode to be parallel
15 to each other, and

said implantable medical instrument has informing means for discriminating and determining that at least one of said different wires is fractured.

11. The implantable medical instrument according
20 to claim 10, characterized by further having measuring means for measuring a motion state or posture of the living body where said electrode is implanted.

12. The implantable medical instrument according to claim 10, characterized in that said informing means
25 measures a parameter that changes on the basis of a change in total electrical resistance of said plurality of wires, compares the parameter with a preset

reference parameter, and informs that at least one of said plurality of wires is fractured when the parameter that changes is smaller than the reference parameter.

13. The implantable medical instrument according
5 to claim 12, characterized in that the parameter includes either one of current, frequency, and time.

14. The implantable medical instrument according
to claim 11, characterized in that said measuring means
further has acceleration sensor means for measuring an
10 acceleration, and measures the motion state or posture
of the living body on the basis of a measurement result
of said acceleration sensor means.

54B
24
15. The implantable medical instrument according
to claim 11 or 14, characterized in that said
15 implantable medical instrument further has storage
means, and when a measurement result obtained by said
measuring means satisfies a predetermined condition,
the measurement result is recorded in said storage
means.

20 16. The implantable medical instrument according
to any one of claims 10 to 15, characterized in that
said lead body comprises a helical parallel coil of
said plurality of wires insulated from each other.